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LCDR John W. DePree, USN

Paper Advisor (if Any): Thomas A. Parker

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14. ABSTRACT

Core service competencies in intelligence, surveillance, and reconnaissance (ISR) is highlighted in the 2009 Quadrennial Roles and Missions Review Report as one of four major "roles and missions focus areas" for the U.S. military in the years to come. The ability to perform persistent surveillance from these typically high-demand but low-density assets necessitates the maximum efficiency of airborne ISR systems in support of the Joint Forces Commander (JFC) and requires the utmost of joint service integration, coordination, and communication. The intent of this paper is to investigate both joint and service ISR doctrine, focusing primarily with that of the U.S. Navy and the U.S. Air force. The amount, quality, and currency of naval doctrine supporting the acquisition, employment, and integration of naval airborne ISR systems starkly reveals that the U.S. Navy is much too focused on infrastructure, architecture, and technology and is missing the core doctrine to effectively contribute to the ISR needs of the JFC. The Navy needs to update and invest in improving its doctrinal publications and witness a paradigm shift away from a mindset of solely supporting the maritime commander in terms of maritime capabilities.

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IS THE NAVY MISSING THE BOAT IN THE DEVELOPMENT OF INTELLIGENCE, SURVEILLANCE, AND RECONNAISSANCE (ISR) DOCTRINE?

by

John W. DePree

LCDR USN

A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Department of Joint Military Operations.

The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

Signature: _____

04 May 2009

Contents

Abstract

Core service competencies in intelligence, surveillance, and reconnaissance (ISR) is highlighted in the 2009 Quadrennial Roles and Missions Review Report as one of four major "roles and missions focus areas" for the U.S. military in the years to come. The ability to perform persistent surveillance from these typically high-demand but low-density assets necessitates the maximum efficiency of airborne ISR systems in support of the Joint Forces Commander (JFC) and requires the utmost of joint service integration, coordination, and communication. The intent of this paper is to investigate both joint and service ISR doctrine, focusing primarily with that of the U.S. Navy and the U.S. Air force. The amount, quality, and currency of naval doctrine supporting the acquisition, employment, and integration of naval airborne ISR systems starkly reveals that the U.S. Navy is much too focused on infrastructure, architecture, and technology and is missing the core doctrine to effectively contribute to the ISR needs of the JFC. The Navy needs to update and invest in improving its doctrinal publications and witness a paradigm shift away from a mindset of solely supporting the maritime commander in terms of maritime capabilities.

INTRODUCTION

The ability of the future force to establish an "unblinking eye" over the battle-space through persistent surveillance will be key to conducting effective joint operations.
-Donald H. Rumsfeld
2006 Quadrennial Defense Review

This quote by, then Secretary of Defense Donald H. Rumsfeld, in his vision for the future of Department of Defense (DOD) intelligence, surveillance, and reconnaissance (ISR) capabilities signifies a major change in the way our armed forces perceive, train, acquire, and integrate ISR capabilities into the joint force. Since 2006, the growing importance of ISR has been felt in continued operations in Iraq and Afghanistan, where counterinsurgency (COIN) forces have waged a persistent battle against irregular forces hidden amongst the masses. A major characteristic of ISR in this "persistent and unblinking eye" vision however has been the high demand but low density of airborne ISR assets.[1] Near term funding for ISR systems and research has already increased, with an additional $750 million included in the 2009 defense appropriations bill.[2] Over the next seven years, DOD plans on further investing some $28 billion in developing ISR systems and capabilities.[3] Core service competencies in ISR is furthermore highlighted in the 2009 Quadrennial Roles and Missions Review Report, a precursor to the next QDR, as one of four major "roles and missions focus areas" for the U.S. military in the years to come. Significant is the Defense Department view that each service should "develop, acquire, and operate unmanned aircraft systems [UAS]"

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[1] 'Low-density, high-demand' of ISR assets first described as such in, Chairman, U.S. Joint Chiefs of Staff, *Joint and National Intelligence Support to Military Operations*, Joint Publication (JP) 2-01 (Washington, DC: CJCS, 07 June 2004), III-11.

[2] Marina Malenic, "DOD Report Calls for Improvements in Lift, Cyber and Irregular Warfare Capabilities," *Defense Daily*, 2 February 2009, http://www.lexisnexis.com/ (accessed 26 March 2009), 1.

[3] U.S. Government Accountability Office, *Intelligence, Surveillance, and Reconnaissance*, GAO-08-374, Washington, DC: GAO, March 2008, 1.

while continuing to develop and integrate "improvements to increase jointness and interoperability of UAS/ISR capabilities".[4] Maximum efficiency of airborne ISR systems, in support of the Joint Forces Commander (JFC), therefore requires the utmost of joint service integration, coordination, and communication. Joint Pub (JP) 1-02 defines this baseline level of coordination as doctrine, stating that it is the "fundamental principles that guide the employment of US military forces in coordinated action toward a common objective."[5] Joint service ISR integration should thus rank as one of our common objectives. Following logically then should be a foundation set in both joint and service doctrine.

The intent of this paper is to investigate both joint and service ISR doctrine, focusing primarily on that of the U.S. Navy and the U.S. Air force, as the two major providers of airborne ISR assets. The amount, quality, and currency of naval doctrine supporting the acquisition, employment, and integration of naval airborne ISR systems in support of the JFC will reveal that the U.S. Navy is much too focused on infrastructure, architecture, and technology – the hardware portion – and is missing the core doctrine, or software aspect, to effectively contribute to the ISR needs of the JFC. The result is poor inter-service ISR and intelligence coordination, the potential for naval ISR resources available to the JFC to be poorly understood, and thus, an often circuitous and largely wasted naval ISR effort. Furthermore, the Navy is missing the boat in terms of solidifying itself, doctrinally, as a major force provider and contributor in the field of irregular warfare (IW) and COIN. To remedy this problem, the Navy needs to update and invest in improving its doctrinal publications. The Navy also needs to shift away from a mindset of solely supporting the

[4] Unmanned Aerial System (UAS). Robert M. Gates, *Quadrennial Roles and Missions Review Report.* (Washington, DC: Department of Defense, January 2009), 24.
[5] Chairman, U.S. Joint Chiefs of Staff, *Department of Defense Dictionary of Military and Associated Terms*, Joint Publication (JP) 1-02 (Washington, DC: CJCS, 17 October 2008), 288.

maritime commander in terms of *maritime* capabilities (e.g. major system acquisitions, infrastructure, tactics, techniques, and procedures (TTPs)) towards a more JFC-centric view – one in which an attitude of 'customer service' or 'What can the Navy do for you?' prevails.

DISCUSSION / ANALYSIS

Current Joint Doctrine – What does it say?

> *[The] execution of joint operations requires optimizing the use of limited ISR assets and maximizing the efficiency of intelligence production resources and is the ultimate test of the efficacy of intelligence support planning.*
>
> -Joint Publication 2-0
> *Joint Intelligence*

The two principle Joint Publications (JP) dealing with operational intelligence and the planning, integration, and architecture of joint ISR systems are JP 2-0, *Joint Intelligence*, dated 22 June 2007 and JP 2-1, *Joint and National Intelligence Support to Military Operations*, dated 07 October 2004. These recently updated doctrinal publications provide basic foundational guidance with respect to the structure of individual intelligence organizations, their overarching responsibilities, and how these and other intelligence resources interact to support operational planning and the execution and assessment of joint operations. A central theme to these publications, substantially reinforced throughout, is the delineation of specific intelligence cooperation and sharing efforts between joint and national government services and agencies, which is defined as crucial to the viability of joint intelligence operations.[6] JP 2-0 goes on to further highlight the importance of a "collaborative enterprise" between joint agencies in which "information sharing, cooperation,

[6] Chairman, U.S. Joint Chiefs of Staff, *Joint Intelligence*, Joint Publication (JP) 2-0 (Washington, DC: CJCS, 22 June 2007), V-1.

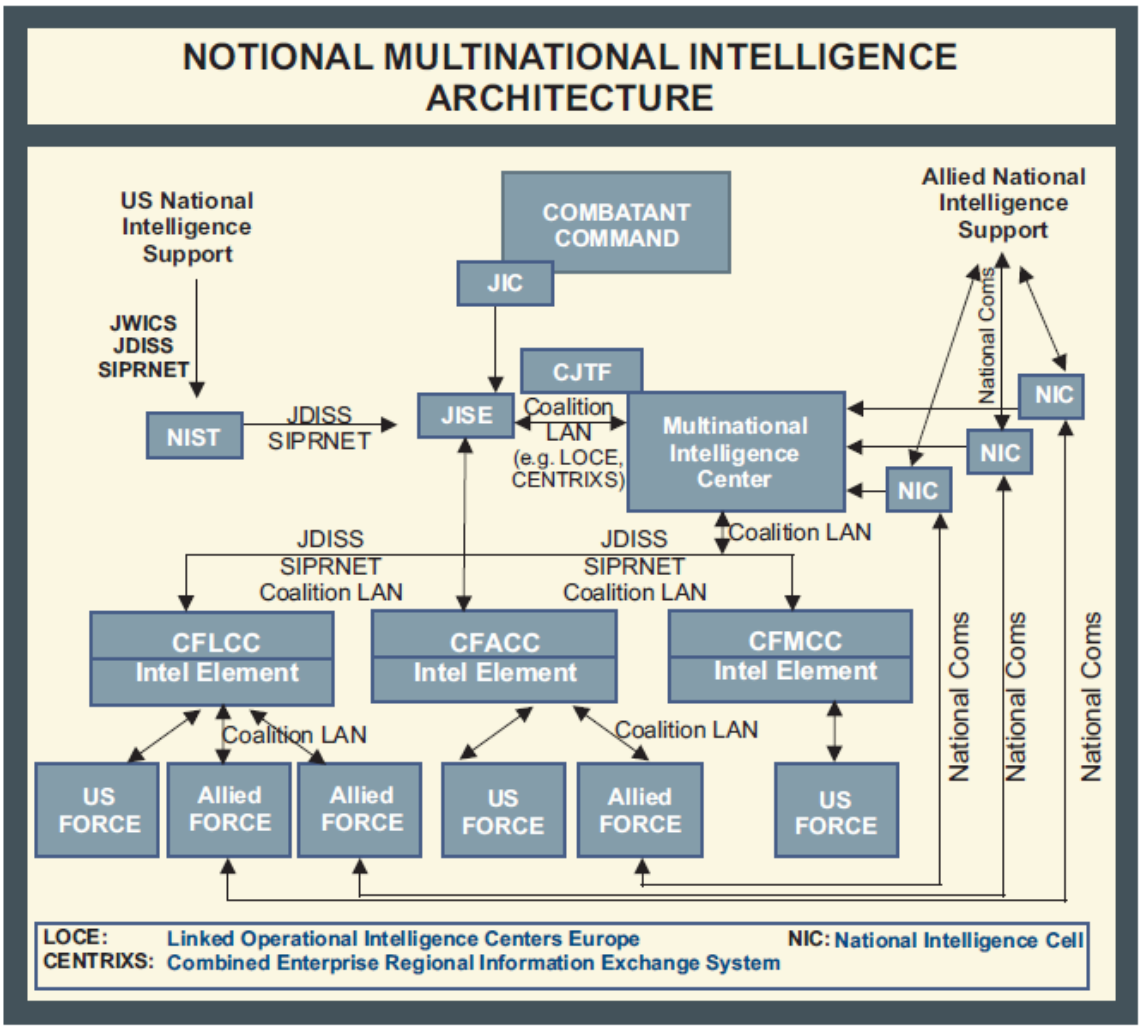
collaboration, and coordination are enabled by an intelligence and information sharing environment" between the range of joint, military, and civilian partners.[7]

What is striking, and apparent early on, is how quickly these publications introduce and promote specific technological apparatus and architecture to support intelligence (and consequently ISR) operations. JP 2-0 specifically calls for an "intelligence sharing architecture" that must be "dynamic, flexible, and capable of providing…rapid access to appropriate data," and assigns the responsibility to create and maintain these systems with the combatant commanders and their subordinate JFCs when established under contingency operations.[8] Furthermore, JP 2-0 calls for the establishment of a Global Information Grid (GIG) as a "distributed global network involving various communication systems, computers, and space based intelligence support systems, and their associated resources and technologies" to aid in the rapid processing, exploitation, and dissemination of intelligence products.[9] Compliance with "net centric data strategies" is also critical to an effective reachback capability for all services resident within the GIG.[10] Thus, by JP 2-0 descriptions, one can surmise that joint intelligence (and its supporting elements) are extremely technical by their very nature and require the utmost of cooperation and integration to be effective in support of joint operations and DOD mandates such as real-time, persistent ISR. The ISR and intelligence process linkage to technology is critical, and helps to understand the potential for divergence between doctrine and the hardware and systems acquired to field a given capability. Figure 1 summarizes a notional joint force intelligence architecture

[7] Ibid.
[8] Ibid.
[9] Ibid.
[10] Ibid., V-11.

framework from JP 2-01, which highlights the connectivity and technology issues resident within any such system.

Figure 1 – Notional Multinational Intelligence Architecture[11]



Both JP 2-0 and JP 2-01 are explicit in delineating and reinforcing the intelligence portion of the operational planning process. The joint publications highlight two products, the Global ISR Strategy and the Combatant Command ISR Strategy, critical to the development of a commander's plan or concept of operations. These two products are created in conjunction with the commander's J-2 via coordination with national level and

[11] Chairman, U.S. Joint Chiefs of Staff, *Joint and National Intelligence Support to Military Operations*, Joint Publication (JP) 2-01 (Washington, DC: CJCS, 07 June 2004), IV-20.

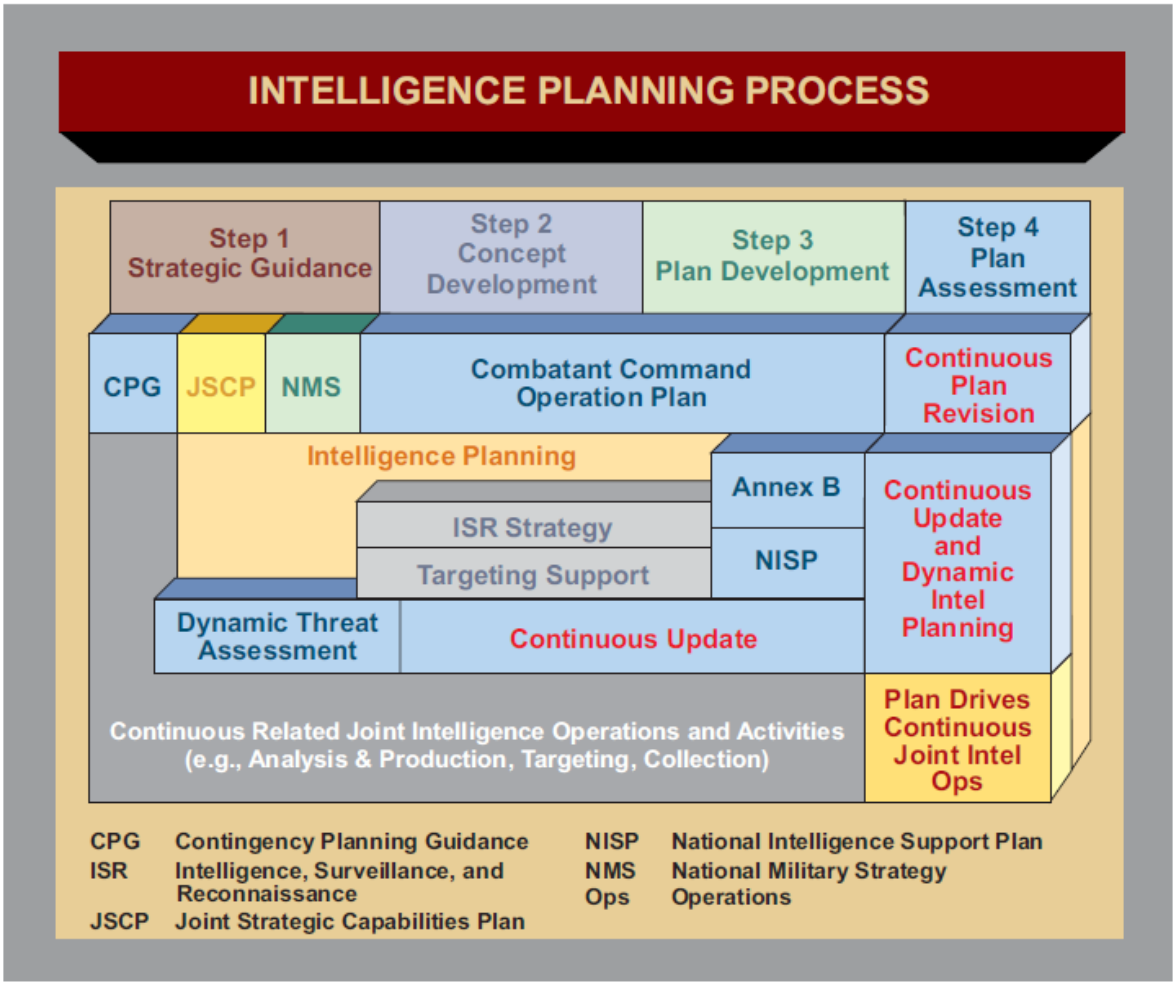
joint service agencies as critical methods to aid the CCDR or JFC in answering specific Commander's Critical Information Requirements (CCIRs) and key Priority Information Requests (PIRs) in accordance with the commander's desired Course of Action (COA).[12] Despite this focus at integrating national level ISR assets, joint doctrine also specifically empowers planners to utilize ISR capabilities provided by "force provider commanders" in the generation of an overall ISR strategy and Annex B[13] of the operational plan (OPLAN).[14] Shortfalls in combatant command ISR assets, whether in capability or allocation, become the basis for requesting outside augmentation from national or intra-theater assets. The driver for this assessment comes via JP 2-01's description of an ISR Concept of Operations (CONOPS), which is designed to ensure the most favorable utilization of available ISR assets.[15]

Joint doctrine finally describes a means of allocating ISR resources based on a system of prioritized requirements in what JP 2-01 terms as a "Requirements-Based ISR Resource Allocation" in order to meet the typically high demand of generally low density ISR assets.[16] This guidance is an important doctrinal means aimed at increasing the overall effectiveness of a JFC's ISR collection system by balancing asset capability with availability, weighted against the requisite importance of a given request for information (RFI) that requires utilization of an ISR asset.[17] The framework ultimately lays the foundation for the joint integration of *all service* ISR assets in support of the JFC. The centrality of an ISR strategy,

[12] U.S. Joint Chiefs of Staff, *Joint Intelligence*, JP 2-0, IV-7. These agencies typically include the Defense Joint Intelligence Operations Center (DJIOC) and Joint Intelligence Operations Center (JIOC).
[13] Annex B and the National Intelligence Support Plan (NISP) are designed to "integrate and synchronize the intelligence support capabilities" of the joint force command with the external DOD intelligence community. Ibid., xvi.
[14] Ibid., IV-6.
[15] U.S. Joint Chiefs of Staff, *Intelligence Support to Military Operations*, JP 2-01, III-10.
[16] Ibid.
[17] Ibid., III-21.

or CONOPS as per JP 2-01, can be seen in Figure 2, which graphically depicts the Intelligence Planning Process.

Figure 2 – Intelligence Planning Process[18]



Naval Doctrine

If joint doctrine is relatively current and specific regarding joint service and interagency integration of ISR and intelligence infrastructure, capabilities, planning, and coordination, one could logically expect service doctrine to follow the same path. Naval Warfare Publication (NWP) 2-01, for example, states its purpose, first and foremost, is to

[18] U.S. Joint Chiefs of Staff, *Joint Intelligence*, JP 2-0, IV-5.

"bridge the gap between joint and naval doctrine."[19] Searching through the relatively limited and outdated naval doctrinal publications quickly reveals, however, this not to be the case. The capstone Naval Doctrine Publication (NDP) 2, *Naval Intelligence*, is dated 30 September 1994 and is more than 14 years old.[20] Signed by ADM Boorda and USMC General Mundy, *Naval Intelligence* serves as a legacy to the transitional navy of 15 years ago and is disconnected to today's National Maritime Strategy.[21] The lack of emphasis in naval service doctrine as a whole is immediately and overwhelmingly apparent. Furthermore, this 'capstone' of naval doctrine is outdated, simplistic, and generic, offering no specific details other than to highlight broad 'enduring principles' applicable to intelligence as a whole. In summary, it is almost useless to the JFC or to any contingency planners, naval or otherwise. Completely absent from NDP 2 and its complementary document, Naval Warfare Publication (NWP) 2-01, *Intelligence Support to Operations Afloat*, is any mention of ISR – its definition, considerations for planning, employment, architecture, and integration to the joint or maritime force.

There are additional failings in Navy doctrine regarding ISR. The remaining naval intelligence publications, Naval Tactics Techniques and Procedures (NTTP) 2-01.2 *Theater Missile Defense Intelligence Preparation of the Battlespace*, and NTTP 2-01.4 *TECHINT*, lack any mention of ISR. The only publication under 'Reconnaissance and Surveillance' on the Navy Doctrine Library System[22] that actually addresses the subject is NTTP 3-55.13, *JSTARS*, a naval title on a multiservice review of the USAF Joint Surveillance Target Attack

[19] U.S. Department of the Navy, *Intelligence Support to Operations Afloat*, Naval Warfare Publication (NWP) 2-01 (Washington, DC: DoN, January 1997, 1-1.
[20] U.S. Department of the Navy, *Naval Intelligence*, Naval Doctrine Publication (NDP) 2 (Washington, DC: DoN, 1994, i, http://www.dtic.mil/doctrine/jel/service_pubs/ndp2.pdf (accessed 26 March 2009).
[21] For more information see http://www.navy.mil/maritime/MaritimeStrategy.pdf.
[22] Naval Doctrine Library System, https://ndls.nwdc.navy.mil/ (accessed 1 April 2009).

Radar System (JSTARS) "system of systems" from the Air Land Sea Application (ALSA) Center[23]. Even more damaging to the Navy's contribution to the joint doctrinal construct is that the lack of current and relevant doctrine enforces the appearance of resisting change, exemplified from this NWP 2-01 quote: "The Navy must fit the changes driven by new missions, technology, and jointness on the foundation of *current fleet intelligence organizations* afloat." [emphasis added][24] Reliance on current organizations to absorb change shows a clear lack of flexibility and desire to improve or adapt to a changing environment. This quote taken in today's perspective provides insight as to how the lack of naval and ISR doctrine, as a foundational level resource to the JFC, hampers the changes required to pursue true interoperability between maritime capability and joint force commander requirements. This doctrinal disconnect – based both on indifference and lack of emphasis – is the foundation of the failure of the Navy to support the JFC's ISR effort.

Although largely useless in the context of 2009 operations, NDP 2 does correctly highlight the then future challenges of naval intelligence, in which the naval force must increase its connectivity and architecture capability, in full compliance with other services, to ensure the flow of intelligence information to and from the maritime commander.[25] Ultimately, NDP 2 gets it partially right by emphasizing the importance of the naval liaison officers (LNOs), who must "act as bridges between cultures, languages, *doctrines*, and methodologies." [emphasis added][26] However, LNOs cannot be considered a coherent and single-voiced entity on which naval ISR capabilities can be based, simply due to the vagaries

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[23] U.S. Navy, *JSTARS*, Naval Tactics Techniques and Procedures (NTTP) 3-55.13, Newport, RI: Naval Warfare Development Command, November 2006, vi. https://ndls.nwdc.navy.mil/pdf_id/2073/3-55-13_(Nov_2006)_(NTTP).pdf (accessed 1 April 2009).
[24] Department of the Navy, *Intelligence Support to Operations Afloat*, NWP 2-01, 3-1.
[25] Department of the Navy, *Naval Intelligence*, NDP 2, 47-49.
[26] Ibid., 52.

of officers assigned. The bridge between naval capabilities and connectivity with JFC requirements must be doctrine.

Failure of Navy Doctrine

The lack of naval doctrine in this and in other intelligence areas is an ongoing deficiency, well documented by its effects. Other sources, including studies made by the Center for Naval Analysis (CNA) conclude that the "limited instruction" provided by naval doctrine makes it "difficult for the Navy to take full advantage of its intelligence operations."[27] CNA recommendations are straightforward, calling on the Navy to create its own doctrine or adapt and supplant doctrine from another service with maritime specific methodology and examples.[28]

The Navy's ISR Recapitalization Strategy

If naval doctrine lacks the currency and focus to tie the gap between naval ISR capabilities and joint doctrine, it begs the question: Can it be found in other sources, such as the testimony and strategic vision offered by the Department of the Navy? Testimony from the Chief of Naval Operations (CNO), ADM Gary Roughead, before Congress in February 2008, describes the acquisition-phased systems that are integral to what he calls the "Navy's airborne ISR recapitalization strategy".[29] Testimony from as early as 2005, by then Deputy CNO and Deputy Director, Air Warfare, RADM Anthony Winns also describes the increased priority into naval investment initiatives related to improving maritime ISR capabilities. The CNO's testimony reveals fiscal year (FY) 2009 recapitalization investment in systems such

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[27] S. John Spey, Jr. and John J. Clifford, *Intelligence Preparation of the Battlespace/Environment in Navy Doctrine, Training, and Operations(U)*, CNA Report CRMD0014135.A2, Alexandria VA: The CAN Corporation, September 2006, 1. (Secret/NOFORN)

[28] Ibid.

[29] ADM Gary Roughead, Chief of Naval Operations, Statement before the Senate Armed Services Committee, Washington, DC, 28 February 2008, 28. http://armed-services.senate.gov/statemnt/2008/February/Roughead%2002-28-08.pdf (accessed 26 March 2009).

as the MQ-8B Vertical Takeoff and Landing Tactical UAV (VTUAV) Fire Scout, the Broad Area Maritime Surveillance (BAMS) UAV, and the Distributed Common Ground/Surface Systems-Naval (DCGS-N)[30] intelligence, surveillance, reconnaissance, and targeting (ISR&T) system include $65 million, $480 million, and $124 million dollars respectively.[31] The Navy is also experimenting with their own Global Hawk Maritime Demonstration System (GHMDS) in order to field persistent maritime ISR capabilities from the current Air Force production of the Global Hawk UAV.[32] In addition, the Navy and Marine Corps are fielding tactical and non-traditional ISR capabilities in the Shared Reconnaissance Pod (SHARP) system for F/A-18E/F aircraft and the Receive-Only Video Enhanced Receive (ROVER) III system, to provide UAV and manned aircraft targeting pod video direct to warfighters on the ground.[33] But recapitalization in this sense reflects a heavy investment in technology and infrastructure – none of the CNO's testimony describes any investment into the 'software' behind naval ISR development, including any doctrinal development of naval ISR publications in order to relate a maritime ISR service capability in support of the JFC.

FORCEnet

Looking into the Navy's recently published Cooperative Strategy for 21st Century Seapower for the potential 'software aspect' of the Navy's airborne ISR recapitalization strategy, reveals the construct of FORCEnet, which embodies the so-called naval vision of

[30] DCGS-N is part of a larger Defense Airborne Reconnaissance Office (DARO) vision for a service integrated architecture (each service with their own DCGS linkage) to combine Image Intelligence (IMINT), Signals Intelligence (SIGINT) and Measurement and Signature Intelligence (MASINT) into a common system. GlobalSecurity.org, "Distributed Common Ground Systems (DCGS)", http://www.globalsecurity.org/intell/systems/dcgs.htm (accessed 26 February 2009).
[31] Roughead, Senate Armed Services Committee Statement, 28-30.
[32] Naval Aviation Enterprise, Naval Aviation Vision, NAE, January 2008, 61. www.cnaf.navy.mil/nae/content.aspx?AttachmentID=23 (accessed 30 March 2009).
[33] RADM Anthony L. Winns, Deputy Chief of Naval Operations, and BGEN Martin Post, Assistant Deputy Commandant (Aviation), Statement before the Tactical Air and Land Forces Subcommittee of the House Armed Services Committee on FY2006 Navy UAV and J-UCAS Programs, Washington, DC, 9 March 2005, 3-5. http://www.navy.mil/navydata/testimony/aviation/winns050309.pdf (accessed 26 March 2009).

SeaPower 21.[34] FORCEnet is described by the Navy to be an "operational construct and architectural framework for Naval Warfare in the Information Age" which serves to "integrate WARRIORS, sensors, networks, command and control, platforms, and weapons into a networked, distributed combat force…"[35] Several authors, in an article submitted to Naval Institute Proceedings describe FORCEnet as a new paradigm for command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) architecture, which can "permit new organizational structures and innovative tactics and *doctrine*, without re engineering the underlying C4ISR environment." [emphasis added][36] Unfortunately, FORCEnet provides no mention of *how* or *when* this doctrine may be developed.

The strong emphasis in improving maritime C4ISR infrastructure is further reinforced by studies conducted by the Naval Studies Board in their *FORCEnet Implementation Strategy* and by the National Research Council Committee in their report titled, *C4ISR for Future Naval Strike Groups*, published in 2006. Effective use of an "adaptable C4ISR architecture," they say is instrumental to the current and future operational effectiveness of naval carrier strike groups (CSGs).[37] A critical analysis of the committee's findings, as well as the self-imposed scope of their investigations, reveals a mindset narrowly focused on technology and the tactical level of war, with no consideration of the interface between naval C4ISR capabilities and support of maneuver warfare on land – this despite acknowledging a

[34] For more information, see http://www.navy.mil/navydata/cno/proceedings.html (accessed 2 April 2009).
[35] U.S. Navy, "FORCEnet", http://forcenet.navy.mil/ (accessed 2 April 2009).

[36] Jeffrey Clarkson, Jeffrey Grossman, Jay Martin, and Paul Shigley, "Composeable FORCEnet Becomes Reality", *U.S. Naval Institute Proceedings*, October 2007, 71. http://search.ebscohost.com/ (accessed 26 March 2009).

[37] National Research Council Committee on C4ISR for Future Naval Strike Groups, *C4ISR for Future Naval Strike Groups*, Washington, DC: The National Academies Press, 2006, xii, http://www.nap.edu/catalog/11605.html (accessed 26 February 2009).

demonstrated poor connection between naval forces and theater and national ISR sources.[38] Furthermore, the committee erroneously concludes that naval C4ISR systems cannot support operational level planning. In a statement at odds with JPs 2-0 and 2-01, the committee states:

> "There is a tendency to think that if the C4ISR system can support tactical execution, including the application of joint fires against time-critical targets, then it can support operational-level planning as well. This is *not* the case."[39] [emphasis added]

This one-dimensional way of thinking also pervades the studies and recommendations made by CNA in support of the Navy's request for assistance in developing an ISR concept of operations (CONOPS) to aid the Navy's integration into a net centric operating environment. CNA's *Framework for an Objective Navy ISR Concept of Operations* explicitly states its purpose is to "serve the needs of the Combined/Joint Force Maritime Component Commander (C/JFMCC) and all subordinate commanders and naval forces."[40] A maritime focus is certainly reasonable here, but in no case does the study mention *how* a persistent naval ISR capability can support of any other joint commander, let alone the Combined/Joint Force Air or Land Component Commander (C/JFACC or C/JFLCC). Cross functional integration with the C/JFLCC is only acknowledged with respect to Close Air Support (CAS), and in this mission area to provide better ground situational awareness to *naval aviators operating from CSGs*.[41]

The CNA studies do go a long way, however, in providing the first step towards the generation of naval ISR doctrine, albeit in draft form and from a civilian research facility.

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[38] Ibid., 52.
[39] Ibid., 110.
[40] Barry F. McCoy and Joseph J. Janeczek, *Framework for an Objective Navy ISR Concept of Operations*, CNA Report CRM D0013779.A2/Final, Alexandria, VA: The CNA Corporation, April 2006, 1.

[41] Unclassified notes from Barry F. McCoy, Annette J. Krygiel, and John J. Cufford, *Draft Navy Objective ISR Concept of Operations* (U), CNA Report CIM D0015020.A2, Alexandria, VA: The CNA Corporation, December 2006, (Secret/NOFORN), C-24.

The overarching effect though, of this long-term and demonstrated lack of naval ISR doctrine is still cemented by these studies into an extremely narrow, culturally influenced, service only view that fails to connect naval capabilities to the true customer – the Joint Force Commander.

Other Service ISR Doctrine – the U.S. Air Force

At the very Heart of Warfare lies Doctrine…
-Air Force Doctrine Document 2-9
ISR Operations

If naval airborne ISR doctrine is lacking in terms of content, currency, or substance, how does other service doctrine compare? In this case, consider the U.S. Air Force, which has recently updated its Air Force Doctrine Document (AFDD) 2-9, *Intelligence, Surveillance, and Reconnaissance Operations* in July 2007. In contrast to the Navy, the Department of the Air Force takes a much different stance on doctrine, and in particular the portion that deals with the operational level of war. AFDD 2-9 is remarkably current, relevant, and focused on the operational relationship of ISR and the JFC. AFDD 2-9 is heavily weighted on the service aspect of ISR operations, placing particular emphasis supporting "Air Force operations"[42] and on the notion that the JFACC "typically serves as the supported commander for theater airborne and spaceborne reconnaissance and surveillance and provides integrated ISR for the joint force commander (JFC)."[43] AFDD 2-9 also makes the pitch that under normal conditions the JFC usually delegates operational control (OPCON) of airborne ISR assets to the commander of Air Force forces, to include tactical control to the JFACC for tasking via the air tasking order (ATO).[44] The rationale

[42] U.S. Air Force, *Intelligence, Surveillance, and Reconnaissance Operations*, Air Force Doctrine Document (AFDD) 2-9, Washington, DC: Department of the Air Force, 17 July 2007, 4.
[43] Ibid., 13.
[44] Ibid., vi.

behind AFDD 2-9 is obvious – that the Air Force owns and normally provides the preponderance of airborne ISR assets to a given theater of operations – but AFDD 2-9 brings other important distinctions to the table.

AFDD 2-9 is remarkable in that it introduces such concepts as predictive battlefield awareness (PBA) and effects based approach to operations (EBAO), while reinforcing the entire intelligence cycle introduced in JPs 2-0 and 2-1.[45] As EBAO (or EBO) cycles in and out of vogue, the important takeaway when viewed in comparison to the previously described lack of emphasis in naval doctrinal publications is the avenue that Air Force doctrine provides for the dissemination of current 'best practices'.[46] Right or wrong, it is an avenue to communicate the Air Force 'way of doing business' and thus integrate itself as a force provider at the JFC level – something the Navy seems unable to do.

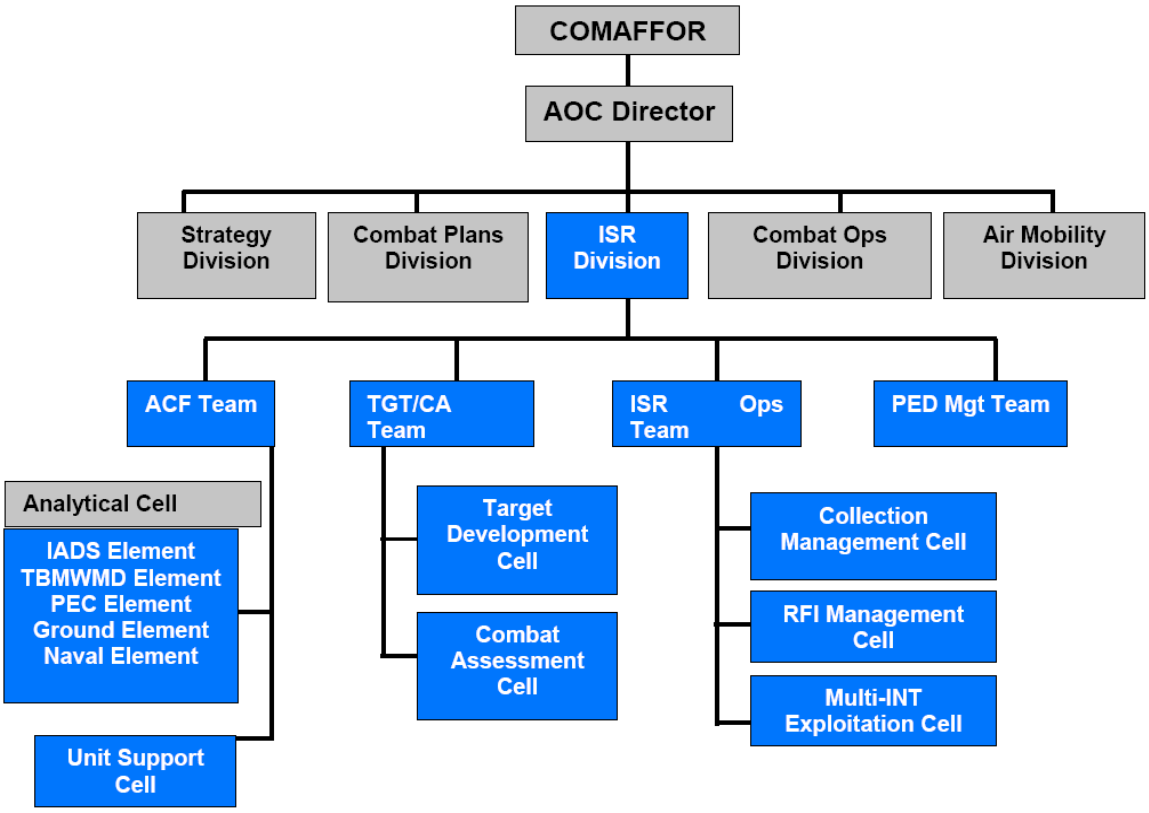
Also significant is AFDD 2-9's doctrinal mechanism for the establishment of an ISR division, to provide integrated, accurate, relevant, timely and fused ISR intelligence tailored to the needs of the intelligence consumer, inside the Air Operations Center (AOC).[47] Figure 3 provides a notional, multi-national depiction of the AOC and its resident ISR division, including a breakdown of individual collection, management, and exploitation cells.

The mention here of "intelligence consumer" speaks highly of the degree of unified effort and subsequent customer service implied by AFDD 2-9, which acknowledges the need to focus on joint and foreign service ISR requirements and production capabilities, inferring

[45] Ibid., 10. PBA is described as a "multidimensional understanding of the battlespace in time, space, and effect," and is "the capability to correlate and fuse patterns of enemy activity and subsequent events to predict adversary intent or potential future enemy courses of action." See also Robert A. Piccerillo and David A. Brumbaugh, "Predictive Battlespace Awareness: Linking Intelligence, Surveillance and Reconnaissance Operations to Effects Based Operations," Research Paper, Washington, DC: Headquarters, Air Force, Intelligence, Surveillance, Reconnaissance Directorate, 2004.
[46] For more information, see GEN J. N. Mattis, Commander U.S. Joint Forces Command to U.S. Joint Forces Command, memorandum, 14 August 2008.
[47] U.S. Air Force, *ISR Operations*, AFDD 2-9, 4-5, 43.

more than any other service publication on the need to solidify ISR at the joint force level.[48] This concept is furthermore reinforced under the description of the Air Force AN/GSQ-272 SENTINAL ISR weapon system (long for AF DCGS), as a medium to coalesce "Air Force, *sister-Service*, national, and coalition sensors in *the air, on land, in space, and at sea* spanning multiple intelligence (multi-INT) sources" to provide "tailored, correlated information to those who need it in the formats, timelines, and channels they need it, at all levels across the globe in peace and in combat." [emphasis added][49]

Figure 3 – Notional Multinational Intelligence Architecture[50]



Although similarly steeped in service-oriented ISR support activities, in conjunction with a heavy focus on technology and net-centric warfare, Air Force ISR doctrine goes a long

[48] Ibid., 7.
[49] Ibid., 33.
[50] Ibid., 44.

way to provide the JFC with a current and relevant foundation for carrying out ISR operations in support of the joint force customer – a distinction that cannot be made from naval doctrine.

The Impact of Culture & Technology on Naval Doctrine

> *Successful joint operations are impossible without the capabilities developed and embodied in each service; service 'cultures' and professional standards are indispensable.*
>
> -Outdated quote of JP 1 from NWP 2-01
> *Intelligence Support to Operations Afloat*

The strong linkage between naval capabilities and technology is not new. Other sources have documented the Navy's blindness to doctrine and alternate focus on technology and the tactical employment of its force. The "Navy's over-reliance on technology", as described by Naval War College Professor Milan Vego, is one of the reasons why the Navy has been slow developing doctrinal publication dealing with maritime combat at the operational level of war.[51] The current focus on net centric operations and technological implementation plans like FORCEnet, reinforce this way of thinking. Vego also describes a lack of doctrinal effort in explaining the employment of naval forces in combination with those of other services.[52] This is in contrast to the Army and Air Force, who are commonly viewed as the leaders in creating current doctrine.[53] The Marine Corps, as part of the Department of the Navy, is also distinctly different than its sister service, publishing as many as 14 intelligence related doctrinal and warfighting publications.[54] One reason for this incongruence is best stated by the Center for Naval Analysis in their description of service

[51] Milan Vego, "Obsessed with Tactics", *Armed Forces Journal*, May 2008, 30.
[52] Ibid.
[53] David E. Johnson, *Learning Large Lessons – The Evolving Roles of Ground Power and Air Power in the Post-Cold War Era*, Santa Monica, CA: RAND Corporation, 2007, xi.
[54] For more information visit https://www.doctrine.usmc.mil.

level effort in IPB, or intelligence preparation of the battlespace[55]: "[The Navy] has historically seen fewer benefits in studying the peculiarities of special operating environments as part of a formal intelligence preparation of the battlespace/environment (IPB/E) process."[56] CNA reasons that the one-dimensional naval focus on the maritime environment, and specifically its influence on naval operations, leaves an intelligence gap that is usually (and easily) filled by the air and land component commander's assessment and analysis of IPB/E. [57] The Navy profits from this arrangement, but likewise has little to offer in return.

Service culture is, in part, responsible for much of the Navy's paradigm. So too, as Dr. Vego points out, is the lack of clarity in joint doctrine as to which level of command the joint force component command should be established.[58] The Navy's consistent focus at the maritime level, at the behest of supporting the C/JFMCC, unnecessarily complicates supporting a true joint force or joint task force commander. Vego goes a step further, claiming, "Having joint force component commanders unnecessarily complicates command and control, logistical support and sustainment, and other tasks."[59] Certainly, bigger issues are at stake here. The point is, culture has and continues to remain a strong influence of joint interoperability, and is one of the reasons why the Navy lacks doctrine to support ISR operations in support of the JFC.

CONCLUSIONS

The Navy remains focused on the technology – the architecture and infrastructure of its current and future maritime ISR capability – and is missing the overarching doctrine to

[55] Now referred to as: Joint Intelligence Preparation of the Operating Environment (JIPOE).
[56] Unclassified notes from McCoy, Krygiel, and Cufford, *Draft Navy ISR CONOPS*, C-26.
[57] Ibid.
[58] Vego, "Obsessed with Tactics", 33.
[59] Ibid.

apply its potent ISR capabilities in a united effort to support the JFC. This systemic diagnosis follows from the very beginnings of joint doctrine, with its heavy slant on technology and intelligence architecture. Even so, the Navy continues to struggle with the tactical versus operational level of war, as witnessed by the dearth of doctrinal publications and the abundance of tactical documents (tactics, techniques, and procedures – TTPs). A rigid cultural mindset of 'where to fit in' also abounds, and continues to manifest itself in the predominant maritime focus within the Navy and its publications.

When the Navy does produce documents, they tend to have a hard focus on infrastructure and architecture to communicate with other joint intelligence analyses. Unfortunately the level of doctrinal effort to tell us how the U.S. Navy does business or plans to work as part of the overall joint effort is substantially lacking. It is past time to change this paradigm, especially in the field of airborne ISR: one need only look at the growth of service doctrine containing ISR capabilities in such documents as AFDD 2-3, *Irregular Warfare*, and Field Manual (FM) 3-24 / Marine Corps Warfighting Publication (MCWP) 3-33.5, *Counterinsurgency*. The Navy is, quite simply, missing an invaluable opportunity to apply its capabilities into the larger joint force environment via doctrine development.

The Navy needs to witness a paradigm shift away from the idea that "the primary function of Navy intelligence is supporting naval operators"[60] towards supporting the joint force effort – whether it is a maritime effort or not. We need to stop thinking one dimensionally in the maritime environment, and start thinking three dimensionally – at the joint force level. The Navy can and should provide ISR support for its wartime forces, but also be able to support the *joint force commander* under the current operational situation.

[60] Unclassified notes from McCoy, Krygiel, and Cufford, *Draft Navy ISR CONOPS*, B-1.

What is missing is a "What can we do for you?" attitude – true customer service at the JFC level. Like *Learning Large Lessons,* the concept of a supported versus supporting component commander, and the existence and location of a JFACC, JFLCC, or JFMCC at all, might provide room for improvement.[61] The answer is, of course, that all services must remove themselves from the antiquated service dominated paradigm and start thinking truly at the joint level.

RECOMMENDATIONS

One of the recommendations made by the Center for Naval Analysis, in their Draft Navy Objective ISR Concept of Operations, called for a "Navy ISR Center of Excellence" to meet the service's growing needs in IMINT exploitation.[62] This may be worthwhile, but it could be even better if it incorporated into an 'Interoperability and Doctrine Center of Excellence,' to work in parallel with the formulation of ISR and intelligence infrastructure and architecture in order to provide the 'software' needed to integrate naval ISR activities at the JFC level.

The bottom line, though, is quite clear – the basis for this interoperability has to begin with doctrine. The easiest course of action is for the Naval Doctrine Development Command to reinvest more effort into the timely upkeep and development of current naval doctrine. As CNA suggested, the basis for a large portion of this missing service doctrine is easily available to serve as a starting point. Failing to tie naval capabilities with doctrine, especially in light of DOD's push for persistent ISR in the context of the changing nature of warfare, means the Navy will inevitably miss out in applying its unique capabilities in efficient support of the JFC.

[61] Johnson, *Learning Large Lessons*, 200..
[62] Ibid., 6.

The formulation of the Joint Intelligence Operations Center (JIOC) by the DOD in April 2006, in order to "integrate operations, intelligence, and planning; break down barriers between the different intelligence disciplines; and emphasize the product of all-source intelligence" is a likely another step in the right direction – but at the joint service level.[63] The Navy could do well to facilitate this integration, and better leverage its position, again by putting renewed effort into their doctrine development command, through currency reviews and synthesis of complimentary naval service doctrine.

Another recommendation is to contribute naval intelligence personnel and liaison to the Air Force ISR Agency (AFISRA) – an agency which organizes, trains, equips, presents, and integrates all-source intelligence on behalf of the Air Force Deputy Chief of Staff for ISR, in order to integrate naval ISR capabilities (and doctrine) into a customer service oriented intelligence package to the JFC. [64]

Lastly, the Joint Staff and Joint Forces Command (JFCOM) ought to weigh the formulation of joint doctrine in a manner that less emphasizes technology and the accommodations of individual service culture and capabilities and shift it to one that offers a truly integrated joint perspective.[65]

[63] Ibid., D-30.
[64] U.S. Air Force, *ISR Operations*, AFDD 2-9, 47.
[65] Derived from Johnson, *Learning Large Lessons*, xvii.

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